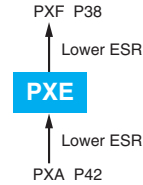


NPCAP™-PXE Series

- Super low ESR, impedance and high heat resistance have been obtained by using conductive polymer as electrolyte.  
(ESR and rated ripple current values are improved from PXA series.)
- Rated voltage range : 2.5 to 16V<sub>dc</sub>, Capacitance range : 33 to 2,700μF
- Suitable for DC-DC converters, voltage regulators and decoupling applications used on computer motherboards etc.
- Solvent resistant type (see PRECAUTIONS AND GUIDELINES)
- RoHS Compliant
- Halogen Free



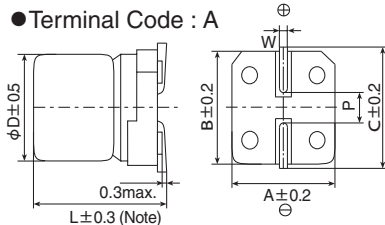
◆ SPECIFICATIONS

| Items  | Characteristics  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
|--|--|------------|-----------------------|--------------------|-----------------------------|--------------|---------------------------------------|-----|---------------------------------------|-----------------|-------------------------------|
| Category   |  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Temperature Range                                      | -55 to +105°C  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Rated Voltage Range                                    | 2.5 to 16V <sub>dc</sub>   |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Capacitance Tolerance                                  | ±20% (M) (at 20°C, 120Hz)  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Surge Voltage  | Rated voltage × 1.15 (at 105°C)  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Leakage Current  | Shall not exceed values shown in STANDARD RATINGS. (at 20°C after 2 minutes)   |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Dissipation Factor (tan δ)                             | 0.12 max. (at 20°C, 120Hz)   |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Low Temperature Characteristics (Max. Impedance Ratio) | Z(-25°C)/Z(+20°C) ≤ 1.15<br>Z(-55°C)/Z(+20°C) ≤ 1.25 (at 100kHz)   |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Endurance  | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 15,000 hours at 105°C.<br><table border="1"> <tr><td>Appearance</td><td>No significant damage</td></tr> <tr><td>Capacitance change</td><td>≤ ±20% of the initial value</td></tr> <tr><td>D.F. (tan δ)</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>ESR</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>Leakage current</td><td>≤ The initial specified value</td></tr> </table>   | Appearance | No significant damage | Capacitance change | ≤ ±20% of the initial value | D.F. (tan δ) | ≤ 150% of the initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value |
| Appearance   | No significant damage  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Capacitance change                                     | ≤ ±20% of the initial value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| D.F. (tan δ)   | ≤ 150% of the initial specified value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| ESR  | ≤ 150% of the initial specified value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Leakage current  | ≤ The initial specified value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Bias Humidity  | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to the DC rated voltage at 60°C, 90 to 95% RH for 1,000 hours.<br><table border="1"> <tr><td>Appearance</td><td>No significant damage</td></tr> <tr><td>Capacitance change</td><td>≤ ±20% of the initial value</td></tr> <tr><td>D.F. (tan δ)</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>ESR</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>Leakage current</td><td>≤ The initial specified value</td></tr> </table>                                      | Appearance | No significant damage | Capacitance change | ≤ ±20% of the initial value | D.F. (tan δ) | ≤ 150% of the initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value |
| Appearance   | No significant damage  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Capacitance change                                     | ≤ ±20% of the initial value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| D.F. (tan δ)   | ≤ 150% of the initial specified value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| ESR  | ≤ 150% of the initial specified value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Leakage current  | ≤ The initial specified value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Surge Voltage  | The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltage specified at 105°C for 30 seconds through a protective resistor (R=1kΩ) and discharge for 5 minutes 30 seconds.<br><table border="1"> <tr><td>Appearance</td><td>No significant damage</td></tr> <tr><td>Capacitance change</td><td>≤ ±20% of the initial value</td></tr> <tr><td>D.F. (tan δ)</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>ESR</td><td>≤ 150% of the initial specified value</td></tr> <tr><td>Leakage current</td><td>≤ The initial specified value</td></tr> </table> | Appearance | No significant damage | Capacitance change | ≤ ±20% of the initial value | D.F. (tan δ) | ≤ 150% of the initial specified value | ESR | ≤ 150% of the initial specified value | Leakage current | ≤ The initial specified value |
| Appearance   | No significant damage  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Capacitance change                                     | ≤ ±20% of the initial value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| D.F. (tan δ)   | ≤ 150% of the initial specified value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| ESR  | ≤ 150% of the initial specified value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Leakage current  | ≤ The initial specified value  |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |
| Failure Rate   | 0.5% per 1,000 hours maximum (Confidence level 60% at 105°C)   |            |                       |                    |                             |              |                                       |     |                                       |                 |                               |

\*Note : If any doubt arises, measure the leakage current after the following voltage treatment.  
Voltage treatment : DC rated voltage is applied to the capacitors for 120 minutes at 105°C.

◆ DIMENSIONS [mm]

● Terminal Code : A



(Note) L ±0.5 for HA0, HC0, JA0, JC0

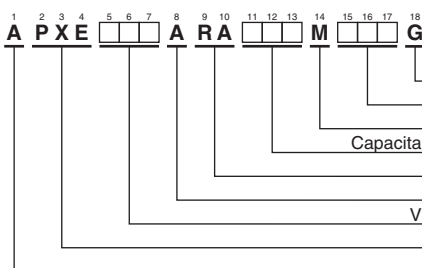
| Size Code | φD  | L    | A    | B    | C    | W          | P   |
|-----------|-----|------|------|------|------|------------|-----|
| E61       | 5   | 5.8  | 5.3  | 5.3  | 5.9  | 0.5 to 0.8 | 1.4 |
| F61       | 6.3 | 5.8  | 6.6  | 6.6  | 7.2  | 0.5 to 0.8 | 1.9 |
| F80       | 6.3 | 7.7  | 6.6  | 6.6  | 7.2  | 0.5 to 0.8 | 1.9 |
| H70       | 8   | 6.7  | 8.3  | 8.3  | 9.0  | 0.7 to 1.1 | 3.1 |
| H80       | 8   | 7.7  | 8.3  | 8.3  | 9.0  | 0.7 to 1.1 | 3.1 |
| HA0       | 8   | 10.0 | 8.3  | 8.3  | 9.0  | 0.7 to 1.1 | 3.1 |
| HC0       | 8   | 12.0 | 8.3  | 8.3  | 9.0  | 0.7 to 1.1 | 3.1 |
| J80       | 10  | 7.7  | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |
| JA0       | 10  | 10.0 | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |
| JC0       | 10  | 12.2 | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |

◆ MARKING

EX) 2.5V390μF



◆ PART NUMBERING SYSTEM



Supplement code  
Size code  
Capacitance tolerance code  
Capacitance code (ex. 47μF:470,100μF:101)  
Taping code  
Terminal code  
Voltage code (ex. 6.3V:6R3,10V:100)  
Series code  
Category

Please refer to "Product code guide (conductive polymer type)"

## NPCAP™-PXE Series

### ◆STANDARD RATINGS

| WV (V <sub>dc</sub> ) | Cap (μF) | Size code | Leakage current (μA max./after 2min.) | ESR (mΩ max./20°C, 100k to 300kHz) | Rated ripple current (mArms/105°C, 100kHz) | Part No.           |
|-----------------------|----------|-----------|---------------------------------------|------------------------------------|--|--------------------|
| 2.5                   | 180      | E61       | 90.0                                  | 21                                 | 2,670                                      | APXE2R5ARA181ME61G |
|                       | 390      | F61       | 195                                   | 15                                 | 3,160                                      | APXE2R5ARA391MF61G |
|                       | 470      | F80       | 235                                   | 13                                 | 3,600                                      | APXE2R5ARA471MF80G |
|                       | 560      | F80       | 280                                   | 13                                 | 3,600                                      | APXE2R5ARA561MF80G |
|                       | 560      | H70       | 280                                   | 13                                 | 4,100                                      | APXE2R5ARA561MH70G |
|                       | 680      | H70       | 340                                   | 13                                 | 4,100                                      | APXE2R5ARA681MH70G |
|                       | 820      | H80       | 410                                   | 12                                 | 4,260                                      | APXE2R5ARA821MH80G |
|                       | 820      | HC0       | 410                                   | 9                                  | 5,400                                      | APXE2R5ARA821MHC0G |
|                       | 1,000    | H80       | 500                                   | 12                                 | 4,260                                      | APXE2R5ARA102MH80G |
|                       | 1,200    | J80       | 600                                   | 13                                 | 4,450                                      | APXE2R5ARA122MJ80G |
|                       | 1,500    | HA0       | 750                                   | 10                                 | 5,220                                      | APXE2R5ARA152MHA0G |
|                       | 1,500    | HC0       | 750                                   | 9                                  | 5,400                                      | APXE2R5ARA152MHC0G |
| 2,200                 | JA0      | 1,100     | 10                                    | 5,500                              | APXE2R5ARA222MJA0G                         |                    |
| 2,700                 | JC0      | 1,350     | 9                                     | 5,600                              | APXE2R5ARA272MJC0G                         |                    |
| 4                     | 100      | E61       | 80.0                                  | 22                                 | 2,610                                      | APXE4R0ARA101ME61G |
|                       | 150      | E61       | 120                                   | 22                                 | 2,610                                      | APXE4R0ARA151ME61G |
|                       | 270      | F61       | 216                                   | 15                                 | 3,160                                      | APXE4R0ARA271MF61G |
|                       | 330      | F61       | 264                                   | 15                                 | 3,160                                      | APXE4R0ARA331MF61G |
|                       | 390      | F80       | 312                                   | 14                                 | 3,470                                      | APXE4R0ARA391MF80G |
|                       | 470      | H70       | 376                                   | 14                                 | 3,950                                      | APXE4R0ARA471MH70G |
|                       | 560      | H70       | 448                                   | 14                                 | 3,950                                      | APXE4R0ARA561MH70G |
|                       | 680      | H80       | 544                                   | 13                                 | 3,950                                      | APXE4R0ARA681MH80G |
|                       | 1,000    | HA0       | 800                                   | 10                                 | 5,220                                      | APXE4R0ARA102MHA0G |
|                       | 1,000    | J80       | 800                                   | 14                                 | 4,300                                      | APXE4R0ARA102MJ80G |
|                       | 1,200    | HC0       | 960                                   | 9                                  | 5,400                                      | APXE4R0ARA122MHC0G |
|                       | 1,200    | JA0       | 960                                   | 10                                 | 5,500                                      | APXE4R0ARA122MJA0G |
| 1,500                 | JA0      | 1,200     | 10                                    | 5,500                              | APXE4R0ARA152MJA0G                         |                    |
| 1,800                 | JA0      | 1,440     | 10                                    | 5,500                              | APXE4R0ARA182MJA0G                         |                    |
| 1,800                 | JC0      | 1,440     | 9                                     | 5,600                              | APXE4R0ARA182MJC0G                         |                    |
| 6.3                   | 100      | E61       | 126                                   | 24                                 | 2,500                                      | APXE6R3ARA101ME61G |
|                       | 120      | E61       | 151                                   | 24                                 | 2,500                                      | APXE6R3ARA121ME61G |
|                       | 220      | F61       | 277                                   | 15                                 | 3,160                                      | APXE6R3ARA221MF61G |
|                       | 270      | F80       | 340                                   | 14                                 | 3,470                                      | APXE6R3ARA271MF80G |
|                       | 330      | F80       | 415                                   | 14                                 | 3,470                                      | APXE6R3ARA331MF80G |
|                       | 330      | H70       | 415                                   | 14                                 | 3,950                                      | APXE6R3ARA331MH70G |
|                       | 390      | H70       | 491                                   | 14                                 | 3,950                                      | APXE6R3ARA391MH70G |
|                       | 470      | H80       | 592                                   | 13                                 | 3,950                                      | APXE6R3ARA471MH80G |
|                       | 820      | HA0       | 1,030                                 | 12                                 | 4,770                                      | APXE6R3ARA821MHA0G |
|                       | 820      | HC0       | 1,030                                 | 10                                 | 5,150                                      | APXE6R3ARA821MHC0G |
|                       | 820      | J80       | 1,030                                 | 14                                 | 4,300                                      | APXE6R3ARA821MJ80G |
|                       | 1,200    | JA0       | 1,510                                 | 12                                 | 5,025                                      | APXE6R3ARA122MJA0G |
| 1,500                 | JA0      | 1,890     | 12                                    | 5,025                              | APXE6R3ARA152MJA0G                         |                    |
| 1,500                 | JC0      | 1,890     | 10                                    | 5,500                              | APXE6R3ARA152MJC0G                         |                    |
| 10                    | 47       | E61       | 94.0                                  | 28                                 | 2,310                                      | APXE100ARA470ME61G |
|                       | 56       | E61       | 112                                   | 28                                 | 2,310                                      | APXE100ARA560ME61G |
|                       | 68       | E61       | 136                                   | 28                                 | 2,310                                      | APXE100ARA680ME61G |
|                       | 120      | F61       | 240                                   | 25                                 | 2,530                                      | APXE100ARA121MF61G |
|                       | 150      | F80       | 300                                   | 21                                 | 2,880                                      | APXE100ARA151MF80G |
|                       | 220      | H70       | 440                                   | 21                                 | 3,220                                      | APXE100ARA221MH70G |
|                       | 270      | H70       | 540                                   | 21                                 | 3,220                                      | APXE100ARA271MH70G |
|                       | 330      | H80       | 660                                   | 19                                 | 3,390                                      | APXE100ARA331MH80G |
|                       | 390      | HA0       | 780                                   | 17                                 | 4,000                                      | APXE100ARA391MHA0G |
| 470                   | J80      | 940       | 19                                    | 3,800                              | APXE100ARA471MJ80G                         |                    |
| 680                   | JA0      | 1,360     | 13                                    | 4,820                              | APXE100ARA681MJA0G                         |                    |
| 16                    | 33       | E61       | 105                                   | 35                                 | 2,070                                      | APXE160ARA330ME61G |
|                       | 39       | E61       | 124                                   | 35                                 | 2,070                                      | APXE160ARA390ME61G |
|                       | 68       | F61       | 217                                   | 28                                 | 2,390                                      | APXE160ARA680MF61G |
|                       | 82       | F80       | 262                                   | 24                                 | 2,700                                      | APXE160ARA820MF80G |
|                       | 100      | F80       | 320                                   | 24                                 | 2,700                                      | APXE160ARA101MF80G |
|                       | 100      | H70       | 320                                   | 24                                 | 3,010                                      | APXE160ARA101MH70G |
|                       | 120      | H70       | 384                                   | 24                                 | 3,010                                      | APXE160ARA121MH70G |
|                       | 150      | H80       | 480                                   | 22                                 | 3,150                                      | APXE160ARA151MH80G |
|                       | 180      | HA0       | 576                                   | 18                                 | 3,890                                      | APXE160ARA181MHA0G |
|                       | 220      | HA0       | 704                                   | 18                                 | 3,890                                      | APXE160ARA221MHA0G |
|                       | 220      | J80       | 704                                   | 22                                 | 3,450                                      | APXE160ARA221MJ80G |
| 330                   | JA0      | 1,050     | 16                                    | 4,350                              | APXE160ARA331MJA0G                         |                    |

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